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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,240	11/18/2003	Mike MacArthur	ROB3108.03A	6893

7590 12/28/2005

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Sacramento, CA 95814

EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,240

Applicant(s)

MACARTHUR, MIKE

Examiner

Sara Addisu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings objected has been withdrawn due to the amended drawings filed 10/13/05.

Claim Rejections - 35 USC § 112

The second paragraph of 35 U.S.C. 112 rejection has been withdrawn due to clarification made via the amendment to the Specification and Drawings filed 10/13/05.

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

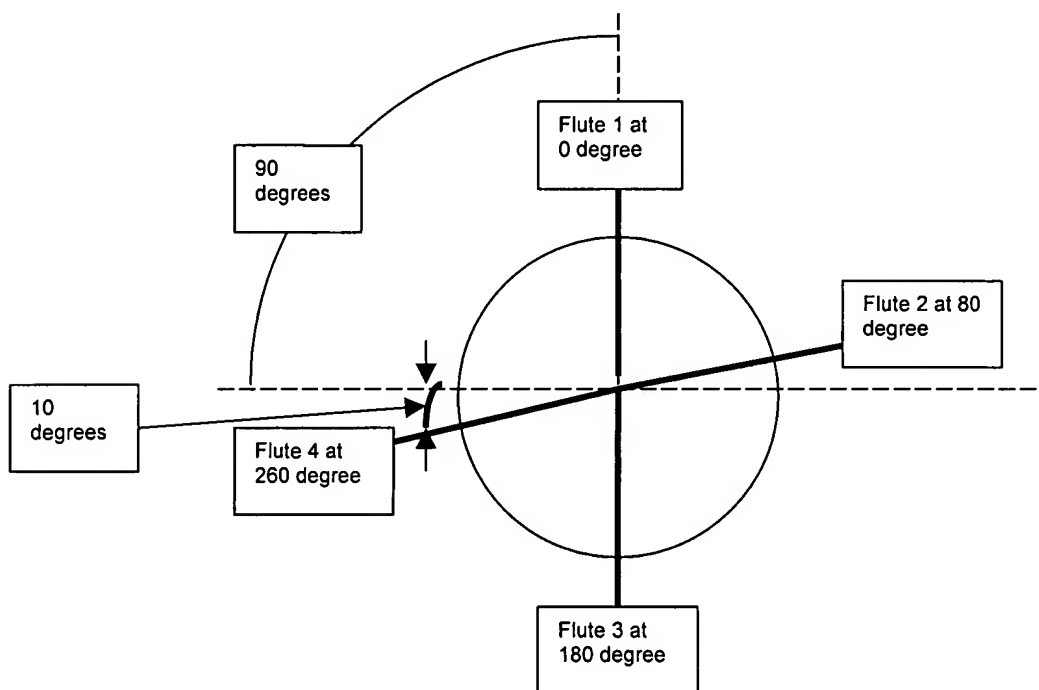
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 4-6, 9, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Flynn et al. (US Pub. No. 2003/0118411).

FLYNN ET AL. teaches a rotary cutting tool (Page 1, paragraph 8) having a shank that extends to a cutting region, the cutting region terminates in a cutting tip, a plurality of flutes formed within the cutting region and cutting edges formed along an outer border of each flute (page 3, claim 1). FLYNN ET AL. also teaches variable helix within a single flute, as well as variable helix(s) in multi-flutes (i.e. each flute comprises a first helical-pitch proximate the cutting tip and a second helical-pitch proximate the terminating distal location with a gradual transition of said flute from said first helical-pitch to said second helical-pitch), for the purpose of reducing or eliminate chatter, in aggressive cutting as well as in finish machining processes (Page 2, Paragraph 36). Furthermore FLYNN ET AL. teaches each flute having its variation in helical pitch running in the opposite direction than the subsequent flute (page 3, paragraph 44). Regarding claims 5 and 6, FLYNN ET AL. teaches a helix varying helix from 30-45 degrees while the other helix varies from 45-30 degrees (which meets the limitation of 10-60 degrees/ 60-10 degrees and 30-40 degrees/ 40-30 degrees, claimed in claims 5 and 6, respectively). Also note that FLYNN ET AL. teaches that it is not necessary that the change in helix is always from a smaller angle to a larger angle (Page 3, paragraph 44). Regarding claims 9 and 15, FLYNN ET AL. teaches the design(s) of his invention are not limited to even number of flutes, or the total number may range from a 1-flute tool to a multi-flute tool of 10 flutes or more, therefore reads on the limitation of "plurality

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of paired flutes". Regarding claims 14 and 15, FLYNN ET AL. teaches flutes aligned directly from one another: four flutes located at 0, 80, 180 and 260 degrees (Page 2, paragraph 40). This configuration shows (see figure below) that the second-forth pair of flutes are off-set from the first-third pair of flutes by an amount of 10 degrees (which meets the limitation of between 1-10 degrees claimed in claims 14 and 15).



Claim Rejections - 35 USC § 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

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granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7, 8, 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Flynn et al. (US Pub. No. 2003/0118411), or, in the alternative, under 35 U.S.C. 103(a) as obvious over Flynn et al. (US Pub. No. 2003/0118411).

FLYNN ET AL. teaches flutes having helical pitch with gradual transition (i.e. helix variability), as set forth in the above rejection. FLYNN ET AL. teaches an end mill with four flutes, each having a different helix from start to finish (e.g. flute 1 varies from 35 degrees to 36 degrees, while Flute 2 varies from 34 degrees to 37 degrees (2003/0118411, figure 1 and Page 3, paragraph 43, lines 1-5). Furthermore, FLYNN ET AL. teaches helix variation running in opposite directions, as set forth in the above rejection (Page 3, paragraph 44, lines 1-6). For further support, FLYNN ET AL. teaches in figure 11, a four-flute tool wherein the helix variability (H1,H2,H3,H4) changes from flute to flute (2003/0118411, page 3, paragraph 47, lines 4-6).

In the alternative, even if it is argued that helix variation running in opposite directions in combination with each flute having a different helix transition from start to finish, is not disclose expressly by FLYNN ET AL., it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the two teachings of FLYNN ET AL., because FLYNN ET AL.'s teaching of helix variation running in opposite directions but having equal helix transitions (i.e. one helix angle being 30-45 degrees while the other helix varies from 45-30 degrees, 2003/0118411, page 3, paragraph 44, lines 6-10) is simply an example and therefore not binding, and additionally FLYNN ET AL. recites, "it is not necessary that the change in helix is always from a smaller angle to a larger angle, nor is the invention limited in terms of multiple helixes beginning and/or end at smaller or larger angles" (paragraph 44, lines 1-5).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
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SA
12/21/05


BOYER D. ASHLEY
PRIMARY EXAMINER